diethoxy acetophenone,

1- hydroxycyclohexyl phenyl ketone,

and 2-methyl-1-{4-(methylthio)phenyl}—2-morpholino-propane-1-one; an anthraquinone such as 2-ethyl anthraquinone, 2-tertiary-butylanthraquinone, 2-chloroanthraquinone, 2-amylanthraquinone; a thioxanthone such as 2,4-diethyl thioxanthone, 2-isopropylthioxanthone, 2-chlorothioxanthone; a ketal such as acetophenone dimethyl ketal, benzyl dimethyl ketal; a benzophenone such as benzophenone, diethylaminobenzophenone, 4,4-bismethylaminobenzophenone; and 2,4,6-trimethylbenzoyl-diphenylphosphine oxide. These may be used alone or in the combination of two or more. Furthermore, these may be used in the combination with an accelerator including a tertiary amine such as triethanolamine and metyldiethanolamine; and a benzoic acid derivative such as N,N-dimethylaminobenzoic acid ethylester and N,N-dimethylaminobenzoic acid isoamylester.

The thermosetting component (F) used in the present invention can make the resin composition a material for preparing the printed circuit board that is excellent in soldering heat-resistance and electrical property. The thermosetting component (F) is not limited to a specific one, as long as it has intramolecularly a functional group that can react with the unsaturated group-containing polycarboxylic

acid resin (B), the urethane oligomer (A) and the thermalplastic polymer (D) to cure thermally. The functional group includes epoxy, melamino-amino, ureido, oxazolyl, and phenolic hydroxy.

The thermosetting component (F) includes an epoxy resin, a melamine compound, an urea compound, an oxazoline compound, and a phenol compound. The epoxy resin includes a glycidyl ether such as a bisphenol A type epoxy resin, a bisphenol F type epoxy resin, a phenol novolac type epoxy resin, a cresol novolac type epoxy resin, a trisphenol methane type epoxy resin, a brominated epoxy resin, a bixylenol type epoxy resin and biphenol type epoxy resin; an alicyclic epoxy resin formed by the porimerization of a monomer such as 3,4-epoxy-6-methylcyclohexylmethyl-3,4-epoxy-6-methylcyclohexane carboxylate, 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexane carboxylate, and 1-epoxyethyl-3,4-epoxycyclohexane; a glycidyl ester such as phthalic acid diglycidyl ester, tetrahydrophthalic acid diglycidyl ester, and dimeric acid glycidyl ester; a glycidylamine such as tetraglycidyl diaminodiphenyl methane; and a heterocyclic epoxy resin formed by the polymerization of a monomer such as triglycidyl isocyanurate. The epoxy resin having a melting point of 50℃ or more is preferable because it can form a photopolymerizing membrane that shows no tackiness after drying.

The melamine compound for the thermosetting component (F) includes melamine, hexamethoxymelamine, and the melamine resin which is a polycondensate of melamine with formalin.

The urea compound includes urea and the urea resin which is a polycondensate of urea with formalin.

The oxazoline compound to use for the thermosetting component (F) includes 2-oxazoline, 2-metyl-2-oxazoline, 2-phenyl-2-oxazoline, 2,5-dimethyl-2-oxazoline, 5-methyl -2-phenyl-2-oxazoline and 2,4-diphenyloxazoline.

Among the above thermosetting components (F), the epoxy resin is preferable because it is excellent in reactivity with the carboxyl groups in the component of (A), (B) and (D), and has a good adhesion to copper.

The above thermosetting component (F) is suitably used in such an amount that the quantity of the functional group of the thermosetting components (F) is 0.2-3.0 equivalent mol per carboxyl group in the component of (A), (B) and (D). The quantity of the above functional group is preferably 1.0-1.5 equivalent mol causing the resin composition to get excellent soldering heat-resistance and electrical property for a printed circuit board.

If the epoxy resin is used for the above thermosetting